

Appendix M

Major DOT Regulations and Example of a Bill of Lading

The major areas in the DOT regulations that are most relevant for transportation of typical portable gauges that are shipped as Type A quantities are as follows:

- Table of Hazardous Materials and Special Provisions 49 CFR 172.101, and App. A, Table 2: Hazardous materials table, list of hazardous substances and reportable quantities
- Shipping Papers 49 CFR 172.200-204: general entries, description, additional description requirements, shipper's certification
- Package Markings 49 CFR 172.300, 49 CFR 172.301, 49 CFR 172.303, 49 CFR 172.304, 49 CFR 172.310, 49 CFR 172.324: General marking requirements for non-bulk packaging, prohibited marking, marking requirements, radioactive material, hazardous substances in non-bulk packaging
- Package Labeling 49 CFR 172.400, 49 CFR 172.401, 49 CFR 172.403, 49 CFR 172.406, 49 CFR 172.407, 49 CFR 172.436, 49 CFR 172.438, 49 CFR 172.440: General labeling requirements, prohibited labeling, radioactive materials, placement of labels, specifications for radioactive labels
- Placarding of Vehicles 49 CFR 172.500, 49 CFR 172.502, 49 CFR 172.504, 49 CFR 172.506, 49 CFR 172.516, 49 CFR 172.519, 49 CFR 172.556: Applicability, prohibited and permissive placarding, general placarding requirements, providing and affixing placards: highway, visibility and display of placards, RADIOACTIVE placard
- Emergency Response Information, Subpart G, 49 CFR 172.600, 49 CFR 172.602, 49 CFR 172.604: Applicability and general requirements, emergency response information, emergency response telephone number
- Training, Subpart H, 49 CFR 172.702, 49 CFR 172.704: Applicability and responsibility for training and testing, training requirements
- Radiation Protection Program for Shippers and Carriers, Subpart I, 49 CFR 172.800, etc.
- Shippers - General Requirements for Shipments and Packaging, Subpart I, 49 CFR 173.403, 49 CFR 173.410, 49 CFR 173.412, 49 CFR 173.415, 49 CFR 173.433, 49 CFR 173.435, 49 CFR 173.441, 49 CFR 173.475, 49 CFR 173.476: Definitions, general design requirements, additional design requirements for Type A packages, authorized Type A packages, requirement for determining A_1 and A_2 , table of A_1 and A_2 values for radionuclides, radiation level limit, quality control requirements prior to each shipment, approval of special form radioactive materials
- Carriage by Public Highway 49 CFR 177.816, 49 CFR 177.817, 49 CFR 177.834(a), 49 CFR 177.842: Driver training, shipping paper, general requirements (secured against movement), Class 7 (radioactive) material

Additional Information Concerning the Transportation of Portable Gauges and XRF's

- **Markings and labels**

They will be durable, legible, in English, and printed on or affixed to the package surface (e.g., a label, tag or sign)

- Required **markings** include:

- Shipping name (ex.: radioactive material, special form, n.o.s., class 7)

- RQ (for gauges with an Am-241: Be source ≥ 10 mCi); add to shipping name

- Identification number (ex.: UN2974)

- Package type (ex.: Type A)

- Required **labels** include:

- Two DOT warning labels (ex: RADIOACTIVE YELLOW II) on opposite sides of the package, listing the package's contents and activity in SI and customary units, the package's Transportation Index, the dimensionless number indicating the package's radiation level at 1 meter. The TI is the maximum dose rate in mrem/hr at one meter from the surface of the package. YELLOW II label packages do not require that the vehicle be placarded.

- **Shipping Papers**

- **Bill of lading** listing the below information will be in the vehicle and immediately accessible to the driver during transport

- Name of shipper

- Description of shipment [proper shipping name, RQ (if applicable) identification number, hazard class, type of package, name an activity of each nuclide, category of labeling and Transport Index]

- Emergency response telephone number (manned by knowledgeable personnel or person with immediate access to knowledgeable personnel)

- Shipper's certification

- Signature of shipper

- Note:**

- An example of a Bill of Lading is Exhibit M-1 of this Regulatory Guide.

Exhibit M-2 is a "Bill of Lading" which a licensee can use. Copy it on to the companies letterhead stationary. Then fill in the appropriate information. The Bill of Lading must accompany the driver of a vehicle during the transportation of the gauge. Source type, source activity and TI may differ from gauge to gauge.

The "RQ" requirement applies only to sources containing americium.

- **Emergency response information** will be provided with the bill of lading and will be immediately accessible to the driver during shipment.
 - **Operating & emergency procedures** will accompany the shipping papers.

Shipper No. _____
Carrier No. _____

Source of material

READ

Daly

Route		Vehicle Number				
No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class Identification Number (UN or NA) per 172.501, 172.502, 172.503	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Related to Container)	RATE	CHARGES (per Car or Unit)
1	RQ	Radioactive material, special form				
		n.o.s. 7 UN2974				
		0.41GBq (11 mCi) Cs-137 and				
		1.9GBq (50 mCi) Am-241:Be	2.31 GBq			
			(61 mCi)			
		RADIOACTIVE - YELLOW II				
		TI = 0.4 **				
		USDOT 7A TYPE A				
		Emergency Response Telephone No.: 1-800-000-0000 (24 hr/d)**				
		** SUBSTITUTE APPROPRIATE INFORMATION FOR				
		YOUR GAUGE AND YOUR SHIPMENT				

REMIT
C.D.D. TO:
ADDRESS:

Note: - Where the rate is dependent on value, shipment is required to state specifically in writing the agreed or declared value of the property. - If the agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding		I hereby declare that the contents of the consignment are fully and accurately described above in proper shipping name and are contained, packaged, marked and labeled in accordance with applicable regulations and are applicable to the following description: UNCLASSIFIED INFORMATION	COD Subject to Section 1 of the conditions, this shipment is to be delivered to the consignee without recourse on the consignor. The consignor shall sign the following statement: The consignor shall not make delivery of the shipment without payment of freight and all other lawful charges.	C.O.D. FEE: PREPAID <input type="checkbox"/> COLLECT <input type="checkbox"/> \$ TOTAL CHARGES: \$ FREIGHT CHARGES <small>Shipment of this kind is subject to the provisions of the International Air Transport Association (IATA) Tariff, which may be obtained from the nearest IATA office.</small>
\$ _____ per _____ <i>John Jones</i> Signature		Signature of Consignor		

RECEIVED: subject to the stipulations and covenants that herein set forth in effect on the date of the issue of the Bldg. of Lending. The property described above is appraised upon order except as noted comments and condition of contents of packages (if any), freight, insurance, and delivered as indicated above which said carrier (or its agent) shall be responsible for the delivery of the property to the person or persons in possession of the property, under the contract to carry to its usual place of delivery at said destination. It is to be noted, however, that in another contract on the back of said document, it is mutually agreed with each carrier of the said property, that said carrier shall also be responsible for the delivery of the property to the person or persons in possession of the property, under the contract to carry to its usual place of delivery at said destination.

Shopper hereby certifies that he is familiar with all the full of listing terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shopper and accepted by himself and his spouse.

SHIPPER	CARRIER
PER	PER
	DATE

Permanent post-office address of signon:

STYLE F90 LABELMASTER, Div. of American Labelmark Co., Chicago, IL 60648 312/478-0800

BILL OF LADING

Shipper: _____

RQ, Radioactive material, special form,, NOS, 7, UN2974
TYPE "A" package, containing:

Cs-137, ____ GBq (____ mCi)
Am-241: Be, ____ GBq (____ mCi)

RADIOACTIVE YELLOW II Label, TI = ____

EMERGENCY CONTACT: (____) ____ - ____

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Shipper: _____
(Signature)